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toying with DC power for data centers

Could cut power bill, keep centers cool

Business Times - July 7, 2006 by [Andrew F. Hamm](#)

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In the bowels of a nondescript office complex in Newark, **Sun Microsystems Inc.** is doing with a small set of blade servers that could change the way we think about electricity in the 21st century.

In a mock data center on DC - direct current - power. If successful, the approach could save electricity and trim new construction costs for data centers across the country. The \$2 million funded by the California Energy Commission has attracted attention across Silicon Valley, the United States and the world.

Using direct current to power the servers allows a higher voltage to be used. It also skips the usual conversion of DC to AC - alternating current - that most electrical products in the United States require.

The thinking is that since power is lost every time you convert the voltage, eliminating that step will save power. Also, heat that is created every time power is converted - an issue in data centers - is reduced.

"The theory is that the servers get better, there is less heat generated, so it costs less to cool," said Dennis Symanski, manager of Sun's worldwide compliance office.

Data center operators often leave much of the space empty because a room filled with hot-running blade servers would overwhelm the building's air conditioning systems.

The goal is to fill up these empty spaces by creating servers that emit less heat. A secondary but important goal is to reduce the overall electricity costs of operating a data center.

A data center uses 50 to 100 times more electricity than a comparable-size office building, industry members show.

Sun has gained the attention of such regional tech giants as **Cisco Systems Inc.**, **Intel Corp.**,

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